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other curves are not in the same degree possessed of. The joints of fracture, or the parts most likely to give way, are at the haunches, and the property in this curve is such, that after an arch is built, and the centering struck, it settles more about the haunches than at any of the other parts.

Elliptical arches also look bolder, are really stronger, and require less materials and labour than any others. The cycloidal arch is next in quality to the elliptical, and lastly, the circle.

The elliptic arch of equilibration, is that which is in equilibrium in all its parts, having no tendency to give way in one place more than another, and is therefore recommended as the most durable, commodious, and beautiful of all arches. Every particular figure of the extrados above an arch, requires a particular curve for the under side of the arch itself, to form an arch of equilibration, so that the incumbent pressure on every part may be proportional to the strength or resistance there. When the arch is equally thick throughout (a case that can hardly ever happen) there the catenarian curve is the arch of equilibration, but in no other case whatever; and therefore it is a great mistake to suppose that this curve is the best figure for arches in all cases, when in reality it is the worst.

The catenarian curve, is that form which a chain or rope takes, by hanging freely from two horizontal points of suspension.

As the choice of the arch is of so great moment, let no person either through ignorance or indolence prefer a worse than what is here recommended, because it may seem to him easier to construct; for he would ill deserve the name or employment of an architect, who is not capable of rendering the exact construction of any curve easy and familiar to himself; but if by chance a *bridge-builder* should be employed, who is incapable of doing that, he ought at least to have so much honesty as to procure some person to go through the calculations which he cannot make for himself.

Any of your readers who wish for further information on this subject, are referred to Dr. Hutton's *Principles of*

Bridges, where they will find the matter fully explained. It is to this work I am principally indebted for the present remarks.—But, Mr. Editor, if I can spare time, and that no person better qualified takes up the subject, I will send you easy and correct rules deduced from first principles, adapted chiefly for those who have not studied the subject in a mathematical point of view.

M.C.

Belfast, 22d May, 1809.

For the Belfast Magazine,

A DIALOGUE.

AN OLD MAN IS QUIETLY WALKING ALONG,
A TRAVELLER COMES AND ACCOSTS HIM.

Tra. Good morning.

Old M. Good morning to you kindly.
Tra. Can you tell me the way to Wexford?

Old M. That I can, for I know the place too well; I am going within a mile of the town, and we can travel together. You seem to be a stranger in the country.

Tra. So I am, although I was born here; but I went to sea when I was a boy, and never saw my native country since.

Old M. Oh! then, it is woefully changed since that time. The rebellion made sad havoc.

Tra. The rebellion! I was in England at the time. Did you lose anything by it?

Old M. Yes (*sighing*) I lost every thing, I may say; it happened this time eleven years; I remember it well, for my poor boy joined them; Oh! it was a sorrowful day to me!

Tra. Was he compelled to join them?

Old M. Yes, his high spirit compelled him. He could not bear to be whipped like a dog, all innocent as he was.

Tra. Whipped!—for what reason? I thought none but the guilty were whipped.

Old M. No, he was as innocent as a child, and ever loyal to his king; but he was poor and suspected, and that was enough for them. When they came to take my poor, poor boy out, he was teaching his little sister to write, for that was his business when he came home from his work; and my wife

and I were sitting smoking, thinking how happy we were to have such a good son. Oh! I thought my poor wife's heart would break when she saw him going. She fell on her knees, and begged them not to take the prop of her old age from her, for she thought he would never recover it. He had a fever long after, which my wife caught in attending him; for, poor woman! she never lay down the whole time, but still watching him. He recovered, but she never did; she is in a better place, so I ought not to fret. (*wiping his eyes.*)

Tra. And where is your son!

Old M. Oh! sir, he is with his poor mother, in heaven; for, as I told you before, sir, he joined the rebels: he thought he was serving his country, but when he saw the cruelty of his own party, he repented, and was coming to give up his arms, when a party of soldiers met him, and took him up; and when he would not inform, they shot him. Poor fellow, he thought it a mean and cowardly thing to be an informer. Well then, they came to my little cabin, and set it on fire. My little girl was burned to death, and old as I am, they would have killed me, only I happened to be out, for nothing was too bad for them to do. So, you see, sir, I had my sufferings; and many more, like me, were left without a child to close their eyes. So now, sir, I bid you good morning—that's your road.

SYLVIA.

For the Belfast Magazine.

I PERCEIVE that your pages are open to free discussion on literary subjects, and that the shadow of a mighty name affords no protection to the possessor of it, whether living or dead, from the censure of just criticism.

The paradoxes of Rousseau are probably known to your readers, by which he advocates the savage life in preference to the advantages of civilization. Some of your readers, perhaps, may not be acquainted with the secret history of his essay on the inequality of man, which he wrote in answer to the question proposed by the academy of Dijon. "What is the origin of the inequality among men? and, if it be

authorized by the law of nature?" He himself describes his sensations, on resolving to write in favour of the savage state, as rising to extacy; and that he was so penetrated with his subject, as to shed many tears. This is all very fine, but he appears only to have been an actor; for, in the memoirs of Marmonel, written by himself, we are assured, on the authority of Diderot, that Rousseau had at first designed to write in favour of civilization, and was resolved to exercise all his powers in its cause. He mentioned his design to Diderot, who observed, that other candidates would, doubtless, display the benefits derived from social improvements; and that it was a path in which he would not be distinguished from the dunces. "C'est un pont aux anes," (a bridge that every animal may pass) was the expression of Diderot. Rousseau changed his plan, and gratified his vanity and love of paradox, by writing in favour of the savage state. Rather than take the vulgar road, he whimsically adduces the advantages of nakedness, inclement seasons, ignorance the most profound, privations of all the comforts of social intercourse, and the society of animals, scarcely inferior to his favourite savage.

A READER.

For the Belfast Monthly Magazine.

I HAVE been your constant reader since the first publication of the Belfast Magazine. With some of your essays I have been highly pleased and instructed. I will trust to your candour to allow me to say, I have also seen some papers in the Magazine, which I do not admire; and which did not even please the class of readers for whom the tales were intended. Some of the tales want consistency of character, and I hope Maria will allow me to mention, a few objections to Rosa. Mrs. Woodley speaking of *Shayboy, knowed, sartaint, axing, and turning* is not characteristic of English manners; the English have a different phraseology: such words are more used by the poorer classes of the Irish whose poverty too frequently prevents them from getting instruction.